

# (12) UK Patent Application (19) GB (11) 2 322 663 (13) A

(43) Date of A Publication 02.09.1998

(21) Application No 9811228.7

(22) Date of Filing 27.04.1996

Date Lodged 27.05.1998

(62) Divided from Application No 9608769.7 under Section 15(4) of the Patents Act 1977

(71) Applicant(s)  
Alan Wallis  
Unit 1, 6 Hellaby Lane, Hellaby Industrial Estate,  
ROTHERHAM, S66 8HN, United Kingdom

(72) Inventor(s)  
Alan Wallis

(74) Agent and/or Address for Service  
Appleyard Lees  
15 Clare Road, HALIFAX, West Yorkshire, HX1 2HY,  
United Kingdom

(51) INT CL<sup>6</sup>  
E06B 3/54

(52) UK CL (Edition P )  
E1R RRA

(56) Documents Cited  
GB 2214218 A GB 0708798 A GB 0532339 A

(58) Field of Search  
UK CL (Edition P ) E1R RF RPS RRA RRH RRK RRV  
INT CL<sup>6</sup> E06B

(54) Abstract Title  
Joining glass sheets edgewise

(57) A joint for joining a sheet 1502 of transparent material, e.g. glass, to another sheet 1501 comprises an elongate insert 1500 positioned adjacent an edge of the sheet, whereby to create a channel for the receipt of settable material (adhesive) 606, which completes the join.

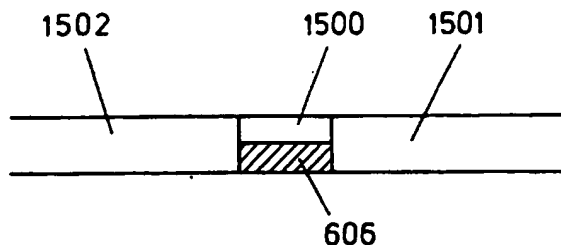
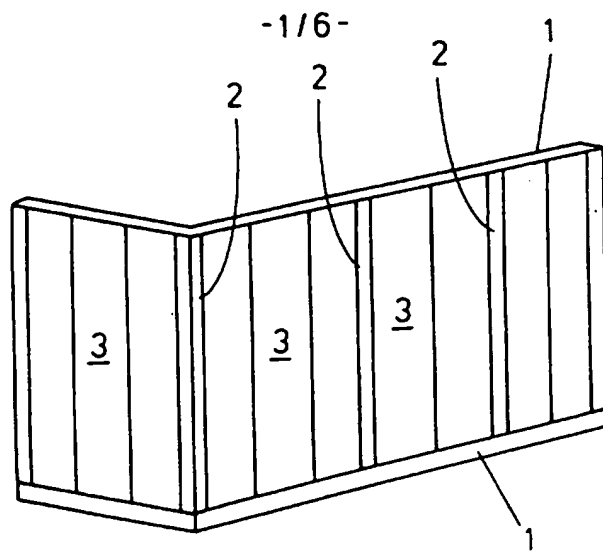


FIG. 15

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PRIOR ART

FIG. 1

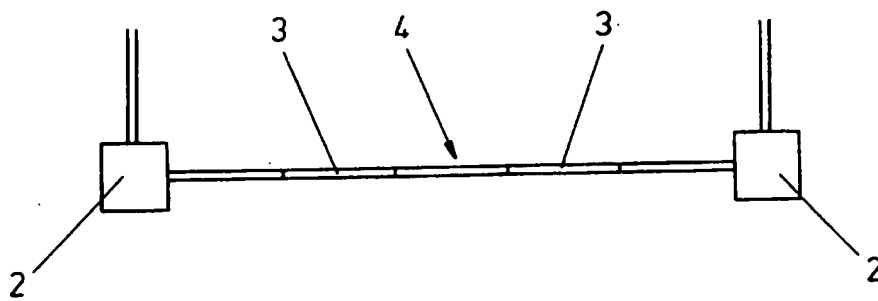
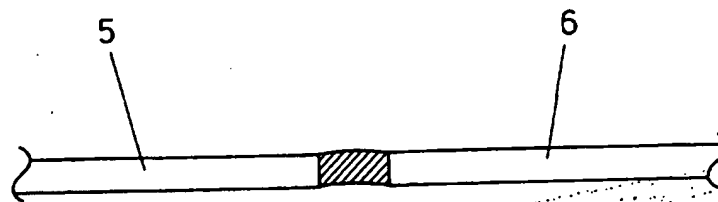


FIG. 2



PRIOR ART

FIG. 3

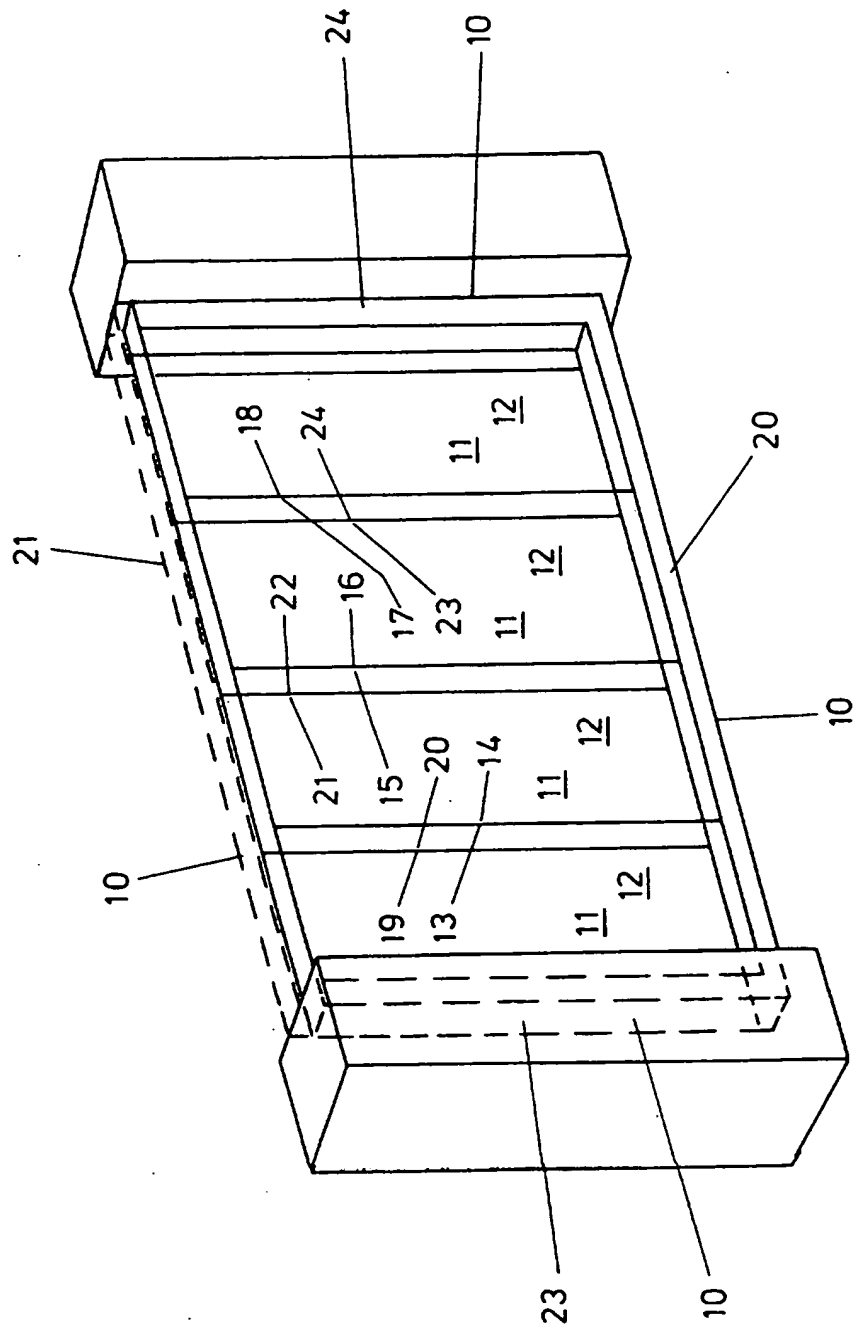


FIG. 4

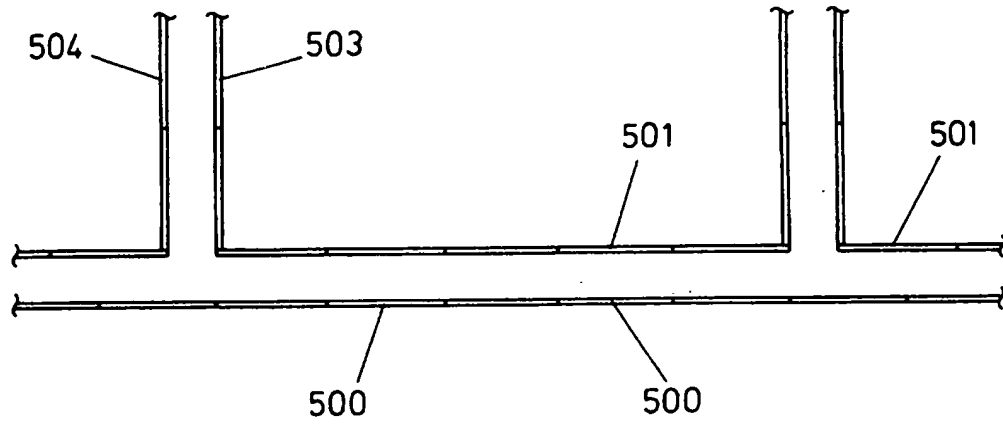


FIG. 5

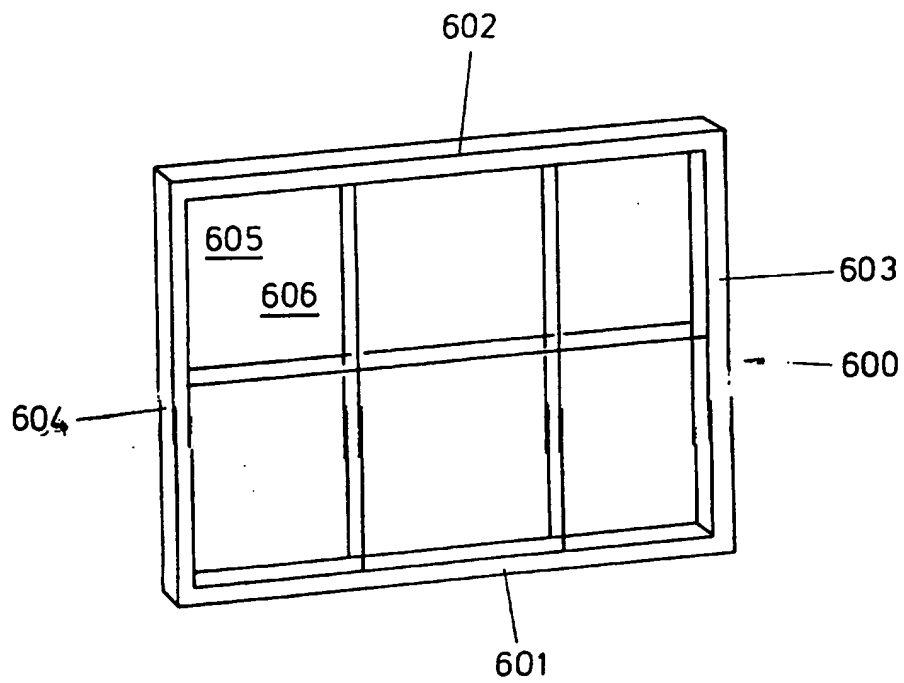


FIG. 6

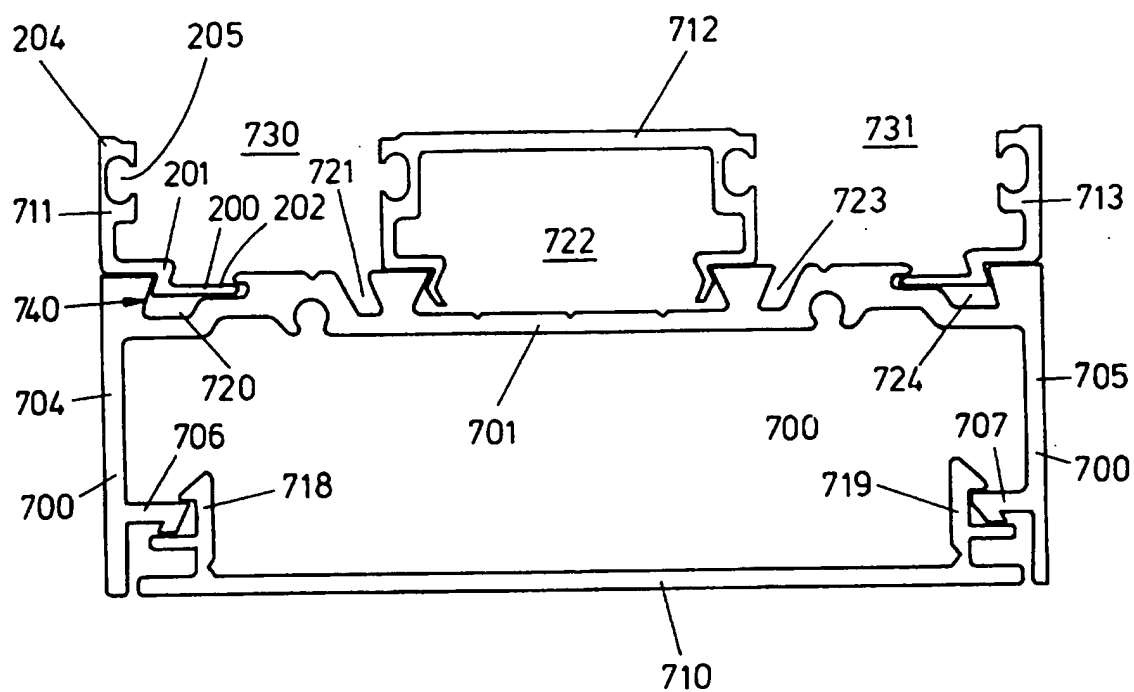


FIG. 7

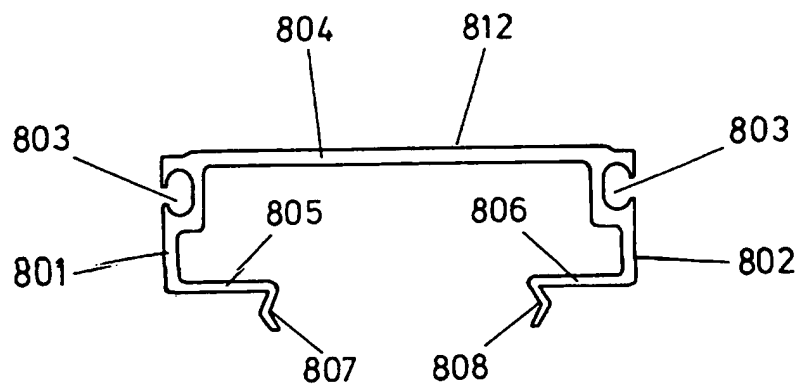


FIG. 8

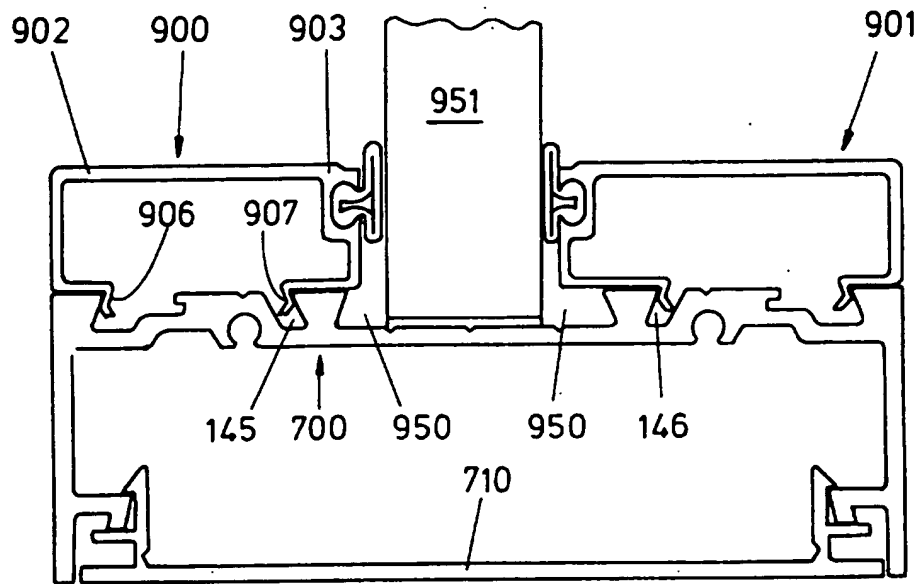


FIG. 9

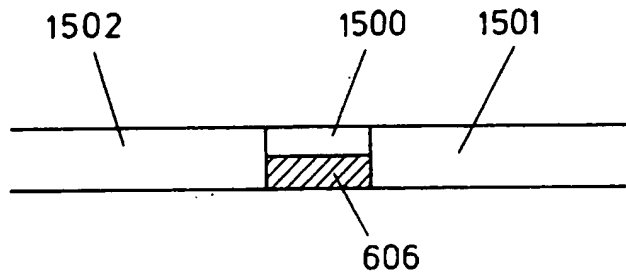


FIG. 15

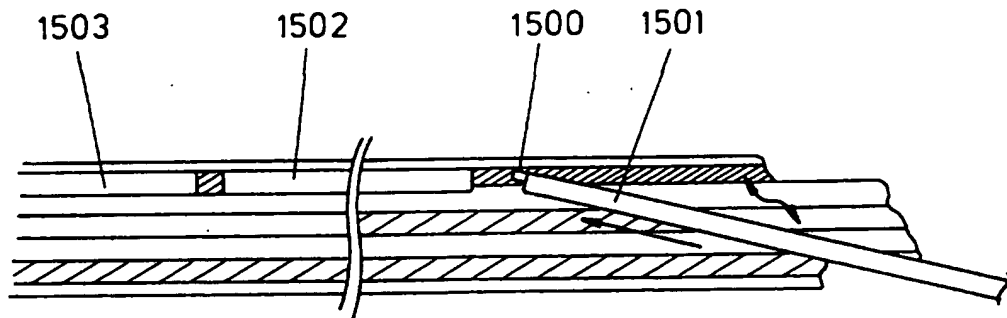


FIG. 16

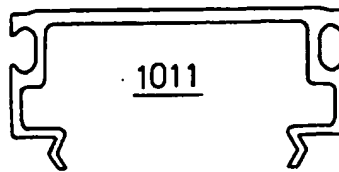


FIG. 13

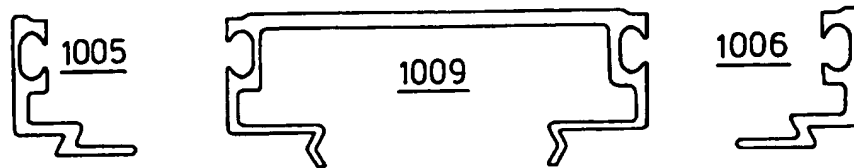


FIG. 11

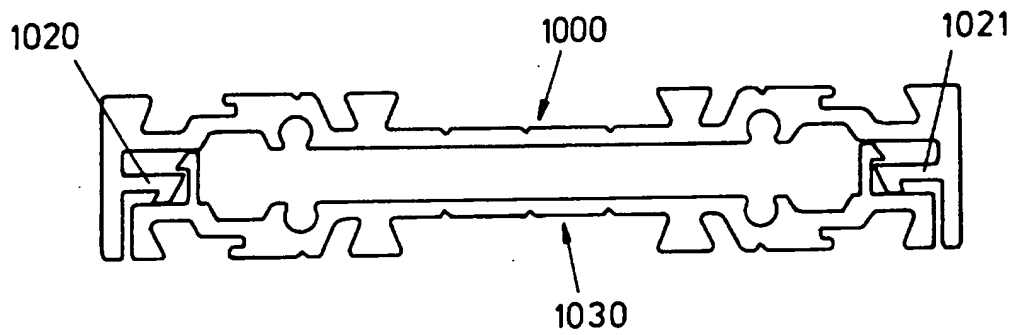


FIG. 10

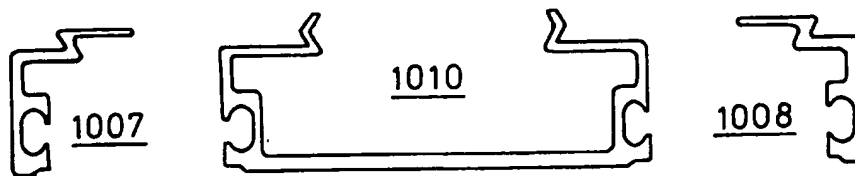


FIG. 12

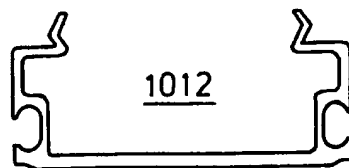


FIG. 14

WALLING METHOD AND APPARATUSTechnical field

5           The present invention relates to the field internal or external walls of a building and particularly, although not exclusively, to glazed internal partition walls.

Background art

10           Internal partition walls having double or single glazed skin membranes are already known. An example of a prior art single skinned glass internal partition wall is shown with reference to figures 1 and 2 of the  
15 accompanying drawings.

          The prior art partition wall comprises an outer frame 1 of wood, metal or plastics material, a plurality of upright mullions 2, and a plurality of sheets of glass 3  
20 joined in side by side relationship within the frame.

          Typically each sheet of glass is 1,200mm wide, and may extend from floor to ceiling. In order to produce a single glass skin 4 the sheets of glass 3 must be joined  
25 to one another along their edges in order for each glass sheet to have sufficient support from neighbouring glass sheets. Conventionally, this is achieved by coating one edge of a first sheet 5 of glass with a proprietary translucent silicone sealant, and then abutting an edge of  
30 a second glass sheet 6 up to the first sheet resulting in the arrangement as shown in plan view in Figure 3 herein. As the silicone sealant squeezes out between the first and second sheets of glass 5,6, the sealant can be wiped, whilst still fluid, to remove excess sealant from the  
35 glass, or an instrument such as a knife can be drawn along



the joint to remove excess sealant. This operation requires access to both sides of the sheets of glass.

Prior art glazed partition walls have an upright  
5 mullion in the form of an aluminium or steel member, at  
the end of a run of glass sheeting. Mullions are  
necessarily fitted at regular intervals in the glass  
sheeting, and at corners in the partition wall, as shown  
in figures 1 and 2 of the accompanying drawings to give  
10 rigidity in supporting the glass.

Another problem with conventional internal glazed  
partition walls, is that in certain instalments, for  
example fitting glass partitioning on the side of an  
15 atrium, access to both sides of the partition wall needs  
to be made in order to fit the glass. Where there is a  
drop on one side of the internal wall special work  
platforms must be used in order to fit the glass sheets on  
the side facing the drop.

20

Specific embodiments of the present invention aim to  
provide an improved method and apparatus for constructing  
a wall, particularly of the glazed type or transparent  
skinned type.

25

#### Description of the invention

A frame assembly for a wall, the frame assembly  
characterised by comprising:

30

a main spar member;

35

one or a plurality of retaining members, each adapted  
for engaging the main spar, for retaining one or more  
sheet members to the main spar.

Preferably said retaining members comprise engagement means for connecting the retaining member(s) to the main spar.

5        Preferably, said engagement means comprises a plurality of protrusions and grooves, said protrusions and grooves engagable with each other for connecting said retaining member(s) to the main spar.

10       Preferably, said main spar comprises an elongate plate portion extending along a length of the spar.

      Said main spar may be provided with first and second said elongate plate portions, facing outwardly of the  
15       spar, in opposite directions to each other.

      Preferably, a said elongate plate portion comprises one or a plurality of said grooves.

20       Preferably, a said elongate plate portion comprises first and second grooves, each extending laterally on opposite sides of the main spar, and a third substantially central groove positioned between said first and second laterally extending grooves.

25

      Preferably, a said groove has at least one sidewall extending in a direction transverse to a direction perpendicular to a main plane of the plate.

30       A said groove may have first and second overhanging side walls, facing oppositely to each other.

      A said groove may have a side wall of substantially half-dove-tailed cross sectional shape.

35

Preferably, said main spar comprises a substantially box section extrusion.

Preferably, a said retaining member comprises an  
5 extruded member.

Preferably, a said retaining member is provided with a said protrusion, for engaging a said groove.

10 Preferably, said retaining member has an engagement means capable of engaging the retaining member to a single said groove.

The frame assembly preferably comprises first and  
15 second said retaining members adapted such that, when connected with the main spar, said first and second retaining members define a channel capable of locating a sheet material therebetween.

20 Preferably, a said retaining member is adapted to locate with a resilient member, said resilient member adapted, in use, to urge between the sheet member and the retaining member.

25 The invention includes a frame assembly comprising first and second retaining members, said first and second retaining members adapted to form a channel therebetween for location of a said sheet material, there being provided one or more resilient members adapted to locate  
30 between the first or second retaining members and the sheet, the effect being that the resilient member urges between the sheet material and the first or second retaining member, in order to maintain engagement of said first or second retaining member with said main spar.

Preferably, a said retaining member comprises an elongate foot portion adapted to engage the main spar in a plane substantially parallel to a main plane of the main spar, and a wall portion extending in a direction  
5 transverse to the main plane of the main spar.

The invention includes a wall section for a building comprising:

10 an outer frame; and

at least one skin extending across the frame;

characterised in that

15

the outer frame comprises a frame assembly according to the above aspect, and the skin comprises a plurality of substantially flat sheet members located in said frame assembly.

20

The invention includes a method of constructing a wall, the method comprising the steps of:

25 positioning a plurality of main spar members to form a frame around an area;

connecting a first plurality of retaining members peripherally to an outer side of the frame;

30 fitting a skin membrane into the frame, said skin having at least one peripheral side portion substantially abutting said retaining member(s); and

35 connecting a second plurality of retaining members peripherally around an inner side of the frame on an

opposite side of said skin to the first plurality of retaining members, such that said skin is retained between said first plurality of retaining members and said second plurality of retaining members.

5

The method may comprise fitting a second skin membrane across the frame, said second skin membrane being positioned to have a first peripheral side portion in abutting relationship to said second plurality of retaining members; and

10

on an opposite side of said second skin membrane to said second plurality of retaining members, connecting a third plurality of retaining members to the frame, such that said second skin membrane is retained between said second plurality of retaining members and said third plurality of retaining members.

15

Said first plurality and said second plurality of retaining members and said first skin are preferably all fitted from a position on one side of the frame.

20

According to a second aspect of the present invention, there is provided a frame assembly for a wall, the frame assembly comprising:

25

a main spar member;

first and second retaining members, each adapted for engaging the main spar, for retaining a walling skin therebetween.

30

According to a third aspect of the present invention there is provided a frame assembly for a wall, the frame assembly comprising:

35

a main spar member;

first and second retaining members for retaining  
first and second walling skins therebetween; and

5

a third retaining member adapted for positioning  
between said first and second walling skins,

wherein at least two of said retaining members are  
10 engagable with said main spar.

According to a fourth aspect of the present invention  
there is provided a joint for joining a sheet of  
transparent or translucent sheet material, the joint  
15 comprising an elongate insert member positioned adjacent  
a face of the sheet, the face extending across a thickness  
of said sheet.

Said insert member may have a width less than the  
20 thickness of the sheet material.

Said insert member may be arranged adjacent said  
face, such that the insert member does not protrude beyond  
first and second planes described by respective first and  
25 second main sides of the sheet.

Preferably, said insert member is transparent or  
translucent.

30 Preferably, said insert member is resilient and/or  
compressible.

Preferably, said insert member comprises at least one  
self adhesive portion capable of adhering to said face of  
35 the sheet.

Preferably, said joint comprises a layer of transparent or translucent settable material capable of setting from a fluid to a solid form.

5        Said settable material preferably comprises a silicone sealant.

10        Preferably said settable material occupies a space between said face of the sheet material, and one side of said insert member.

15        According to a fifth aspect of the present invention there is provided a wall comprising an outer frame and first and second skins, said first and second skins extending across the frame in a side by side relationship, characterised in that each said skin comprises a plurality of sheets of material joined continuously in side by side relationship by a plurality of joints, each said joint comprising a material settable from a fluid to a solid form.

20        The invention includes a method of joining a sheet of transparent material along a face of the sheet which extends across a thickness of the sheet, the method comprising the steps of:

25        (i) positioning an elongate insert member between said face of the sheet and a further member to which the sheet is to be joined;

30        (ii) introducing a settable material in contact with said face and said insert member, such that said settable material is bordered by said insert member, said face, and said further member.

35

Said insert member preferably has a width less than the thickness of the sheet material.

5 Said method may include placing said elongate insert member nearer to one side of the sheet member than to another side of the sheet.

10 Said member preferably comprises introducing said settable material into a channel formed between said face, said insert member, and said member to which the sheet is to be joined, said settable material being introduced into said channel in fluid form.

15 Preferably, said settable material comprises a material capable of adhering to glass.

Preferably, said settable material comprises a silicone material.

20 The invention includes a wall comprising a frame assembly or a joint as described by the above aspects.

#### Description of the drawings

25 For a better understanding of the invention, and to show how embodiments of the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings, in which:

30 Figure 4 shows in perspective view a double skinned glass partition wall according to a first preferred embodiment of the present invention;



Figure 5 shows in plan view an arrangement of double skinned glass partition walls according to second preferred embodiment of the present invention;

5        Figure 6 shows in general perspective view, a third preferred embodiment, comprising an arrangement of glass sheets in double glazed configuration, the sheets connected in side by side and vertically stacked arrangement;

10        Figure 7 shows in end view a frame section assembly as may comprise the walls of figures 4, 5 and 6, in a double skin configuration;

15        Figure 8 shows an alternative centre section for the assembly of figure 7;

20        Figure 9 shows a variation of the first frame section assembly of figure 7, having alternative glass retaining member sections;

Figures 10 to 12 shows a second frame assembly as may be used for the partition of figures 4, 5 or 6.

25        Figures 13 and 14 show respective alternative centre retaining member sections for the second frame assembly;

30        Figure 15 shows in plan view a joint according to another preferred embodiment of the present invention, the joint being between a first sheet of glass and a second sheet of glass; and

35        Figure 16 of the accompanying drawings shows a method of fitting a final sheet into a skin of a wall, the skin comprising a continuous run of sheets.

Best mode for carrying out the invention

Referring to figure 4 of the accompanying drawings, a wall construction comprises an outer frame member 10 and first and second transparent skins 11, 12 in spaced apart relationship to each other with a cavity therebetween, the first and second transparent skins being contained within the frame. The first and second transparent skins each comprise a plurality of sheet members, the glass sheets arranged in side by side relationship to each other within the frame, and adjacent sheets being joined to each other along adjacent upright edges, 13 & 14; 15 & 16; 17 & 18 along the first skin, and along upright edges 19 & 20; 21 & 22; 23 & 24 along the second skin.

15

The frame comprises a floor spar 20, a roof spar 21, and first and second upright spars 23, 24 respectively. In figure 4, the roof section 21 is shown in broken lines, to illustrate the cavity spacing between the first and second spaced apart transparent skins. The transparent skins are each contained within the frame, and stretch across the frame.

Referring to Figure 5 of the accompanying drawings, there is shown in plan view, a second embodiment wall section. The second wall section comprises first and second skins 500, 501 respectively, each comprising a plurality of sheets of glass or the like, extending substantially vertically between a lower frame and an upper frame (not shown in Figure 5). The first and second skins are in spaced apart relationship, forming a glass wall. The first skin 500 extends along a first plane and the second skin 501 extends in a second plane. Along a third plane, transverse to the first and second planes extends a third skin of a second wall, the second wall

35

comprising the third skin 503 and a fourth skin 504. At the intersection between the second and third planes the glass sheets are joined directly to each other with a translucent seal therebetween, of silicone or other transparent or translucent settable material, without the need for a connecting upright member. Along a fourth plane, parallel to the third plane and transverse to the first and second planes extends the fourth skin 504.

Referring to figure 6 of the accompanying drawings, there is shown another preferred embodiment wall, comprising an outer frame 600, the outer frame comprising a floor spar 601, a roof spar 602 and oppositely facing upright spars 603, 604, the frame containing first and second spaced apart glass walls 605, 606, which extend substantially parallel to each other, and across the frame.

Each skin comprises a plurality of sheets of glass abutted side by side and top to bottom, with a clear jointing between edges of adjacent sheets.

Referring to figure 7 of the accompanying drawings, there is shown in cut away view a first preferred frame section assembly. The first frame section assembly may be used as a floor section, roof section, or upright section of the frames of figures 4, 5 or 6, for containing one or more glass skins.

The first frame section assembly comprises a main spar 700, an anchor plate strip 710 and a plurality of retaining strips 711, 712 and 713. First and second glass retaining strips 711, 713 and a central spacer glass skin retaining strip 712 are fitted to the main spar 700.

The main spar 700 is in the form of an elongate aluminium or plastics extruded plate 701 comprising a flat sheet having a plurality of grooves for connecting to the glass retaining strips. The plurality of grooves 720, 721, 722 and 723 run along the length of the spar and parallel to each other. A first said groove 720 extends laterally along one side of the plate, a second said groove 722 extends centrally along the plate, and a third said groove extends laterally along another opposite side of the plate 701, the second central groove being positioned between the first and second grooves. The main spar 700 comprises first and second upright side walls 704, 705 respectively placed on either side of the plate 701, the first and second side walls extending in respective first and second planes, each of the first and second planes extending transverse, and preferably perpendicular, to a main plane of the plate 701.

At lower edges of the first and second side walls 704, 705 are provided elongate engagement portions 706, 707 respectively, each in the form of an elongate strip having a substantially truncated triangular cross section, spaced apart from the side wall.

The main spar may be closed by an anchor plate strip 710 which fits between the lower edges of the first and second side walls, and engages with the first and second engagement portions thereof. The anchor plate strip 710 comprises an elongate sheet of plastics or aluminium, having upwardly projecting clip portions 718, 719 for clipping to the first and second engagement portions 706, 707 respectively of the main spar.

In the configuration of figure 7 the first frame section comprises first and second glass retaining edge

strips 711, 713 respectively and a central glass retaining  
spacer section 712. The central spacer section 722 fits  
into the central dove-tail channel 722 of the base plate,  
and the first and second glass retaining edge strips 711,  
5 713 fit respectively into the first lateral groove 720 and  
the second lateral groove 724. When fitted to the base  
plate, the first glass retaining edge strip 712 and the  
central spacer section 722 form an elongate glass channel  
730 therebetween, of dimensions suitable for receiving a  
10 sheet of glass material, for example of dimension around  
21mm wide. Similarly, the second glass retaining edge  
strip 713 and an opposite side of the central spacer  
section 712 form a second channel 731 of substantially  
rectangular cross section, running parallel with the first  
15 channel, for accepting a second sheet of glass therein.

Each of the first and second glass retaining edge  
strips comprise an elongate footer strip 200 which fits  
into the respective lateral groove 720 or 724, the footer  
20 strip, in cross sectional view as viewed along a main  
length of the strip, having a heel portion 201 which, in  
use, fits under a first overhanging edge 740 of the first  
lateral base plate groove 720, the first overhanging edge  
being nearer the first side wall, and a toe portion 202  
25 which fits under an opposite overhanging edge of the first  
lateral groove 720, the opposite overhanging edge being  
nearer the centre of the base plate than the first  
overhanging edge, the footer strip being connected to an  
upright elongate outer retaining wall 204, extending along  
30 the length of the footer strip, the outer retaining wall  
204 comprising a substantially flat strip of material,  
having a receiving groove 205 for receiving a strip of  
resilient glazing rubber, plastics glazing sealing strip  
or the like, the receiving groove facing inwardly towards

the channel formed between the retaining wall 204 and the central spacer section 712.

Similarly, the second glass retaining edge strip 713  
5 fits into the second lateral base plate groove 724, the  
footer strips of the first and second glass retaining  
strips 711, 713 respectively facing towards each other.  
An outer surface of the upright portions 204 forms a  
continuous surface with the respective side walls 704 or  
10 705 of the main spar.

The central spacer section 812, comprises an  
aluminium, plastics or the like extrusion of a  
substantially rectangular box section, being open at a  
15 lower side thereof. The central spacer section 712 may be  
provided in different widths, one of which is shown fitted  
in figure 7 of the accompanying drawings, and another,  
larger width, is shown in figure 8 of the accompanying  
drawings.

20 Referring to figure 8 of the accompanying drawings,  
the (larger width) central spacer section 712 comprises a  
substantially rectangular box section extrusion having  
first and second spaced apart retaining walls 801, 802  
25 respectively, for abutting a sheet material eg. glass,  
each retaining wall having an outwardly facing groove 803  
for accepting a rubber or plastics glazing strip. The  
first and second retaining walls 801, 802 respectively are  
each connected together, by a spacer plate 804 in the form  
30 of a substantially flat extruded sheet, which extends  
between the first and second retaining walls 801, 802,  
spacing the first and second retaining walls apart. At a  
lower edge of each of the first and second retaining walls  
are respective first and second seating plates 805, 806,  
35 the first and second seating plates extending respectively

along the main lengths of the retaining walls 801, 802 and in a plane transverse and preferably substantially perpendicular to the main planes of each of the first and second retaining walls 801, 802. Between the first and  
5 second retaining walls are provided first and second downwardly depending connector strips 807, 808, which are provided along respective inwardly facing edges of the first and second seating plates 804, 805 respectively for engaging with the overhanging edges of the central dove-  
10 tail channel 712 of the main spar, to retain the central spacer section to the plate 701.

The first and second connector strips 807, 808 each comprise a first strip in a plane transverse to the main  
15 plane of the plate 712 and transverse to a plane perpendicular to the main plane, and a second strip which lies in a plane transverse to the first plane. In use, the connector strips form an elongate heel portion in which connects under respective over hanging walls of the  
20 central groove 722.

The central spacer section may be clipped into place in the central groove 722 of the plate 701, the first and second connector strips 806, 807 becoming located  
25 underneath the overhanging side walls of the central groove 722. The central spacer section 800 may be clipped in to the central dove-tail channel 703, or detached from the central dove-tail channel 703 as appropriate. Different central spacer sections of different widths may  
30 be used in order to obtain different widths of glass receiving channels, 730, 731.

Referring to figure 9 of the accompanying drawings, there is shown a variation of the first frame assembly of  
35 Figure 7 comprising the main spar 700 and the anchor plate

strip 710, fitted with fourth and fifth glass retaining strips 900, 901.

5       The fourth glass retaining strip 900 comprises a substantially box section extrusion of aluminium, plastics or the like, having an upper wall 904, and substantially perpendicular to the outwardly facing upper wall 901, an upright glass retaining inner wall 903, the glass retaining inner wall 903 having a receiving groove 904 for fitting a plastics or rubber glass sealing strip. First and second engagement seating portions 906, 907 respectively are provided for connecting the second glass retaining strip to the base plate, the first engagement portion 906 comprising a substantially heel shaped strip adapted to fit underneath an overhanging side wall of the first lateral groove of the base plate, and the second engagement portion 907, comprising a heel shaped strip portion arranged to fit underneath an overhanging edge portion of a fourth groove, positioned between the first lateral groove and the central groove, the arrangement being that the first and second engagement portions are resiliently biased towards each other and deformable so as to clip into the first lateral groove 720 and the intermediate fourth groove 745.

25

      The fourth glass retaining strip 900 is connected to one side of the plate 701, whilst the fifth glass retaining strip 901 which is identical or very similar in construction to the fourth glass retaining strip is fitted to the outer side of the base plate.

30

      In use, a central channel 950 for receiving a sheet of glass 951 is formed between the fourth and fifth glass retaining strips.

35



The glass sheet 951 is sandwiched between the fourth and fifth retaining strips. Between the fourth retaining strip and the glass sheet is provided a resilient sealing strip 950, and similarly between the fifth retaining strip and the glass sheet 951 is provided another resilient sealing strip 906.

Referring to figures 10 to 12 of the accompanying drawings, there is shown a second frame section assembly, the second assembly comprising a main spar 1000, similar to the main spar of the first assembly, but having shorter side walls 1001, 1002 than those of the main spar 1001; a backing plate 1003, which clips into the main spar 1000, sixth to ninth edge retaining strips 1005-1008 respectively, each identical or substantially similar to the first and second retaining strip 711, 713, and tenth and eleventh central retaining strips 1009, 1010 respectively, each identical or substantially similar to the third retaining strip 712. There may be provided twelfth and thirteenth central retaining strips, 1011, 1012 each slightly narrower than the tenth and eleventh retaining strips, as alternatives thereto.

The backing plate 1003 comprises an extruded plate adapted to clip into the main spar 1000. The backing plate 1003 is of near-identical layout to the main plate of the main spar 1000 and the main plate 1001 of the main spar of the first assembly. The grooves of the backing plate 1003 face outwardly in an apposite direction to those of the plate of the main spar, the arrangement being that the combined main spar and backing plate forms a box section, with grooves for connection of the retaining members in opposite sides of the box section.

The configuration of figures 10 to 12 may be useful where a first run of double glazed glass is to be connected to a second run of double glazed glass on an extended run comprising a large plurality of glass sheets, or where additional rigidity of the glass walling is required.

Alternatively, an outer wall frame may be formed from the section assembly of figure 10. The spar 1000 may be screwed or bolted directly to a floor, upright member eg. a pillar, and ceiling in order to enclose a walling area as described with reference to figure 4. In this case, the main spar may abut inwardly towards the centre of the enclosed area, and the backing plate 1003 may face directly onto the floor, upright support, or ceiling, with screws or bolts passing through the main spar 1000 and backing plate 1003 and retaining the main spar 1000 to the surrounding structure. In this configuration, a slimline frame having a lower height than the first frame assembly and enabling the glass sheets to approach nearer to the floor, ceiling or pillars may be obtained.

Alternatively, there may be provided a second anchor plate strip (not shown) similar to the first anchor plate strip of figure 7 or 9, having protruding engagement strips for engaging the engagement portions 1020, 1021 of the main spar 1000. Where a separate anchor plate strip is provided, the anchor plate strip may be secured to surround an area to be enclosed by walling, by screwing or otherwise attaching the anchor plate strip to the surrounding wall, upright pillars and ceiling, and then appropriate lengths of the main spar extrusion 1000 may be cut, and the main spar extrusion clipped or otherwise pushed into place, in engagement with the engaging strips of the anchor plate strip.

Because the anchor plate strip may be a much thinner strip of material than the main spar, more accurate placement of the anchor plate strip may be made, with the opportunity for removing the anchor plate strip and replacing the anchor plate strip being made easier, than may be achieved by attaching the main spar directly to the supporting surround structure of floor, ceiling, pillars etc.

10 A method of installation of a double skinned sheet material wall will now be described with reference to figures 4 and 7 of the accompanying drawings. It will be understood by the person skilled in the art that variations on the structure of the wall may be made by introducing upright mullions using the second frame section assembly described with reference to figures 10 to 12.

20 In this instance a wall comprising first and second continuous runs of sheets in side by side relationship will be described.

Firstly, a length of anchor plate strip section 710 is fitted to a floor, ceiling, and upright supports, eg. pillars, of a building to define an outer frame of the wall section. The wall section may be intended as an external wall, or preferably as an internal partition wall.

30 The anchor plate strips 710 may be fixed to an existing floor, support pillar, ceiling or roof of a building. A first anchor plate strip 710 may be secured to run across the floor between two pillars. Opposite the first anchor plate strip, and facing towards the first anchor plate strip may be fixed a second anchor plate

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strip extending across a ceiling, directly above the first anchor plate strip. Between the first and second anchor plate strips may be provided third and fourth anchor plate strips extending upright and secured to first and second  
5 oppositely facing pillars, or other upright supporting structures. The first to fourth anchor plate strips may enclose an area, in which a wall according to a specific embodiment of the present invention is to be constructed.

10 Having secured the anchor plate strips 710, corresponding lengths of main spar 700 may be cut, and clipped over the anchor plate strips such that the longitudinal grooves face inwardly towards the centre of the area on all main spars.

15 The first lateral grooves of the main spars, are then fitted with corresponding lengths of a glass retaining edge strip, for example the first glass retaining strip 711 in the case of a double glazed system. The retaining  
20 strips are fitted with sealing strips.

Sheets of glass material 11 comprising a first skin are abutted to the glass retaining edge strips 711 peripheral to one side of the framework. As each glass  
25 sheet is placed adjacent its neighbouring glass sheet in side by side relationship to construct a continuous glass skin, a silicone sealant in fluid form may be squeezed to form a bead of sealant along the edge of each glass pane, on a face of the glass sheet extending between opposite  
30 sides of the glass sheet, across the thickness of the glass sheet. When two glass sheets are abutted edge to edge, the respective faces of each glass sheet, which each extend across the respective thicknesses of the glass sheets, are joined by the silicone sealant.

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Since the sheets are of width around 1200mm, there may be sufficient room on one side of the skin such that, excess silicone sealant material can neatly be removed from both sides of the glass sheets, by a person standing on one side of the glass skin and stretching around the glass sheet to reach the outer side of the skin. Thus, where the glass skin is to be built on the side of a structure, there being a drop on the other side of the structure, because the glass retaining strips prevent the glass falling outwards, and because it is possible to lean across or use a tool to remove excess silicone from the outwardly facing side of the glass, below which there may be a large drop, glass can be fitted from one side of the glass skin, without the need to provide specific access to the other side of the skin.

After the first, second and third glass sheets of the outer facing skin in figure 4 have been completed, there is then a problem in fitting the final glass sheet, since access to the joint from the outwardly facing side is not available.

Referring to figures 15 and 16 of the accompanying drawings, to fit the last sheet of glass, a self adhesive transparent or translucent adhesive strip 1500 may be fitted to the edge of the last glass sheet 1501 which is to connect with the existing adjacent glass sheet 1502. The insert member 1500 may comprise a double sided transparent tape, or the like, or may comprise a transparent strip which may be stuck to the face traversing the thickness of the glass, using double sided transparent adhesive tape or the like.

Referring to figure 16, there is shown schematically in plan view a method of fitment of the last sheet of

glass in a glass wall skin, where existing glass sheets 1502, 1503 are already in place. The elongate insert member which runs down the edge of the glass 1501 is shown prior to contacting the face extending across the edge of the penultimate sheet of glass 1502.

The last sheet of glass is manoeuvred into position, such that the insert member contacts accurately the face of the penultimate sheet of glass extending across the thickness of that sheet.

Referring to figure 15 of the accompanying drawings, there is shown the joint between the penultimate sheet of glass 1502 and the last sheet of glass 1501 in finished form. The insert member 1505 is shown in plan view, and the silicone sealant 1505 which is used to fill the channel formed between the insert member and the final and penultimate sheets of glass is also shown.

Referring to figure 6 of the accompanying drawings, there is shown another arrangement of a double skinned glass partition wall, in which twelve individual glass sheets are arranged in a double glazed fashion six glass sheets per side, in which six glass sheets are connected to each other with silicone sealant therebetween, without the need for a horizontal cross member or an upright mullion, interfering with the continuous glass skin.

CLAIMS

1. A joint for joining a sheet of transparent or translucent sheet material, the joint comprising an  
5 elongate insert member positioned adjacent a face of the sheet, the face extending across a thickness of said sheet.
2. A joint according to claim 1, characterised in that  
10 said insert member has a width less than the thickness of the sheet material.
3. A joint according to any preceding claim, characterised in that said insert member is arranged  
15 adjacent said face, such that the insert member does not protrude beyond first and second planes described by respective first and second main sides of the sheet.
4. A joint according to any preceding claim,  
20 characterised in that said insert member is transparent or translucent.
5. A joint according to any preceding claim, characterised in that said insert member is resilient  
25 and/or compressible.
6. A joint according to any preceding claim, characterised in that said insert member comprises at  
30 least one self adhesive portion capable of adhering to said face of the sheet.
7. A joint according to any one of claims 25 to 30, characterised in that said joint comprises a layer of  
35 transparent or translucent settable material capable of setting from a fluid to a solid form.

8. A joint according to claim 7, wherein said settable material comprises a silicone sealant.

5 9. A joint according to claim 7 or 8, in which said settable material occupies a space between said face of the sheet material, and one side of said insert member.

10 10. A method of joining a sheet of transparent material along a face of the sheet which extends across a thickness of the sheet by means of a joint according to any preceding claim, the method comprising the steps of:

15 (i) positioning an elongate insert member between said face of the sheet and a further member to which the sheet is to be joined;

(ii) introducing a settable material in contact with said face and said insert member, such that said settable material is bordered by said insert member, said face, and  
20 said further member.

25 11. A method according to claim 10, in which said insert member has a width less than the thickness of the sheet material.

12. A method according to claim 10 or 11, characterised by placing said elongate insert member nearer to one side of the sheet member than to another side of the sheet.

30 13. A method according to any preceding claim, characterised by introducing said settable material into a channel formed between said face, said insert member, and said member to which the sheet is to be joined, said settable material being introduced into said channel in  
35 fluid form.



14. A method according to any preceding claim, in which said settable material comprises a material capable of adhering to glass.

5 15. A method according to any preceding claim, wherein said settable material comprises a silicone material.

16. A joint substantially as herein described with reference to Figures 15 and 16.

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17. A method substantially as herein described with reference to Figures 15 and 16.

15 18. A wall comprising a joint as claimed in any one of claims 1 to 9.



# The Patent Office

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Application No: GB 9811228.7  
Claims searched: 1 - 18

Examiner: J D Cantrell  
Date of search: 24 June 1998

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): E1R: RF, RRH, RRK, RRV, RPS, RRA

Int Cl (Ed.6): E06B

Other:

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2214218 A BUILDERS &C	1
X	GB 708798 MYRTHA	1
X	GB 532339 COMPAGNIES &C	1-3,10-14

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.